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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,600	12/23/2003	David M. Hoffman	GEMS 0224 PA	1599
27256	7590	02/23/2006	EXAMINER	
ARTZ & ARTZ, P.C. 28333 TELEGRAPH RD. SUITE 250 SOUTHFIELD, MI 48034			TANINGCO, MARCUS H	
			ART UNIT	PAPER NUMBER
			2884	

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/707,600

Applicant(s)

HOFFMAN, DAVID M.

Examiner

Marcus H. Tanningco

Art Unit

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 12-17, 19 and 21 is/are rejected.
- 7) ☒ Claim(s) 9, 11, 18 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kingsley (US 4,180,737).

Re claims 1, 6, and 16, Kingsley discloses an image detector assembly (Fig. 1) comprising: a detector array **10**; a scintillator assembly **11** positioned in communication with said detector array **10**; a first collimator array **24** provided to shield said scintillator assembly **11**, said first collimator array **21** mounted to said scintillator assembly (Col. 4, 21-34); and a second collimator array **21** provided to reduce x-ray scatter. Although Kingsley fails to disclose said second collimator array **21** mounted independently from said first collimator array **21**, it would have been obvious to one with ordinary skill in the art at the time the invention was made to separate said first and second collimator, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

Re claim 2, Kingsley discloses a first collimator array **24** has a first collimator width to shield said scintillator **11** and a first collimator height with minimal effect on x-ray scatter.

Re claim 3, Kingsley discloses a second collimator array **21** to reduce x-ray scatter (Col. 4, 34-41) and having a second collimator width with minimal effect on shielding.

Re claim 4, Kingsley discloses each collimating member is formed of a high atomic number material (Col. 3, 8-10).

Re claim 5, Kingsley discloses said first collimator array **24** made of tungsten (Col. 3, 8-10).

Re claim 7, Kingsley discloses said second collimator **21** having a width less than 200 microns (Col. 4, 13-14) wherein said first collimator **24** width is greater than said second collimator **21** width (Fig. 1).

Re claim 17, Kingsley discloses the claimed invention according to claim 16, but fails to disclose manufacturing said second collimator array with greater tolerances than said first collimator array. Those skilled in the art can appreciate that simple collimators, such as those that may be cast, are manufactured with higher tolerances in order to reduce cost.

Claims 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kingsley in view of Hoge (US 2004/0217291).

Re claims 8 and 19, Kingsley discloses most aspects of the claimed invention according to claim 1, but fails to specify said first collimator array composed of a loaded epoxy formed directly onto said scintillator array. Hoge teaches a collimator array **86** formed of epoxy [0037] formed directly onto a scintillator array **57** (Fig. 6). It would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Kingsley with the

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collimator taught by Hoge because use of different materials with different x-ray absorption properties may be desired, depending on the application.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kingsley in view of Joung et al. (US 2005/0017182 A1).

Re claim 10, Kingsley discloses the imaging detector assembly according to claim 1, but fails to teach said first collimator array is composed of a grid formed directly onto said scintillator array. Joung teaches a collimator array composed of a grid **10** formed onto a scintillator array **14**. It would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Kingsley with the collimator grid in order to provide optical isolation between the pixilated scintillators [0025].

Claims 12, 15, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kingsley in view of Schafer et al. (US 6,091,795).

Re claims 12 and 21, Kingsley discloses an image detector assembly (Fig. 1) comprising: a detector array **10**; a scintillator assembly **11** positioned in communication with said detector array **10**; a first collimator array **24** provided to shield said scintillator assembly **11**, said first collimator array **24** mounted to said scintillator assembly (Col. 4, 21-34); and a second collimator array **21** provided to reduce x-ray scatter, said second collimator array **21** mounted independently from said first collimator array **24**. Kingsley fails to disclose said scintillator assembly **11** comprised of a plurality of scintillator cells separated only by thin film reflectors.

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Schafer teaches a CT detector array comprising a scintillator assembly **18** defining a plurality of scintillators **22** separated by thin film reflectors **30**. It would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Kingsley with the thin film reflectors in order to reduce cross talk emissions.

Re claim 15, Kingsley discloses a first collimator array **24** has a first collimator width to shield said scintillator **11** and a first collimator height with minimal effect on x-ray scatter.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kingsley and Schafer et al. in view of Joung et al.

Re claim 13, Kingsley discloses the imaging detector assembly according to claim 1, but fails to teach said first collimator array is composed of a grid formed directly onto said scintillator array. Joung teaches a collimator array composed of a grid **10** formed onto a scintillator array **14**. It would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Kingsley with the collimator grid in order to provide optical isolation between the pixilated scintillators [0025].

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kingsley and Schafer et al. in view of Hoge.

Re claim 14, Kingsley discloses most aspects of the claimed invention according to claim 12, but fails to specify said first collimator array is optimized to improve QDE. Hoge teaches a collimator array **86** formed directly onto a scintillator array **57** (Fig. 6). It would have been obvious to one with ordinary skill in the art at the time the invention was made to form the

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collimator array onto the scintillator array of Kingsley in order to eliminate the air gap to improve the collimation achieved by the collimators, thus improving the QDE [0037].

### **Allowable Subject Matter**

Claims 9, 11, 18 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Re claims 9, 11, and 20, prior art teaches mounting the collimators directly onto the scintillator array, but fails to teach or suggest the collimator comprised of etching a grid directly onto the scintillator array.

Re claim 18, prior art fails to teach a fourth generation imaging assembly.

### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hase et al. (US 5,099,134) teach a collimator and a method of producing a collimator for a scintillator.

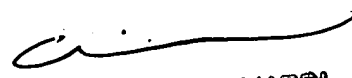
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcus H. Taningco whose telephone number is (571) 272-1848. The examiner can normally be reached on M - F 9:00 - 5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MT

  
**ALBERT J. GAGLIARDI**  
**PRIMARY EXAMINER**